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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,004	12/03/2003	Kun-Hyung Lee	4591-351	7187
20575	7590	08/29/2005	EXAMINER	
MARGER JOHNSON & MCCOLLOM, P.C. 210 SW MORRISON STREET, SUITE 400 PORTLAND, OR 97204			GARBER, CHARLES D	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/728,004

Applicant(s)

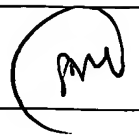
LEE ET AL.

Examiner

Charles D. Garber

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 12 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-3, 16-19 and 21 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7-11 and 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01/03/2005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claims 5, 7, 8, 9, 10, 11, 13, 14, 15 are objected to because of the following informalities: The abbreviation "CMP" must be spelled out.

Claim 4 is objected to because of the following informalities:  
"andmercaptoundecanoic" should be spelled --and mercaptoundecanoic--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 16-19, 21, rejected under 35 U.S.C. 103(a) as being unpatentable over Nagao Nobuaki (English language abstract and machine translation of Japanese Patent document 09-210975) in view of Cozzette et al. (US Patent 5,837,446) and Tate (US Patent 3,938,263).

Regarding claims 1, 16, 17, 19, 21, Nagao discloses a gas sensing device with a surface acoustic wave (SAW) transmitter 2 and receiver 3 having a sensitive film 4 between the transmitter and receiver. The SAW device is based on a "quartz resonator" which is inherently piezoelectric. The film may be of any material which reacts with the gas component to be measured.

Nagao however does not expressly teach the sensitive film comprises cellulose nitrate.

Cozzette teaches cellulose nitrate is useful as an "analyte attenuation (AA) layer, ... deposited over [an active] biolayer". "In utilizing an AA layer, the problem of sensor fouling by extraneous materials is also obviated" (column 36 line 66 to column 37 line 44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use cellulose nitrate in the sensitive film in order to prevent sensor fouling from extraneous materials.

The reference also do not expressly teach the cellulose nitrate dissolved in a solvent such as acetone.

Tate teaches a thin rapid drying film with cellulose nitrate may be formed by mixing cellulose nitrate with a solvent including acetone.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a film of cellulose nitrate by mixing cellulose nitrate with acetone solvent so that it may be dry rapidly after it is applied and thereby reduce fabrication time.

As for claims 3 and 18, the references disclose the claimed invention except for ratio of cellulose nitrate dissolved in the acetone from about 0.3 to about 3.0 weight percent. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a ratio of cellulose nitrate dissolved in the acetone from about 0.3 to about 3.0 weight percent, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### ***Allowable Subject Matter***

Claims 5-15 and 20 are allowed.

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or fairly suggest the sensitive film as used in the claims further comprising dibutyl phthalate, a mixture of benzene and ethanol, ethyl acetate and mercaptoundecanoic acid as in the instant invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg



**CHARLES GARBER**  
**PRIMARY EXAMINER**